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GEOGRAPHIC VARIATION AND PROBABLE SOURCES OF THE NORTHERN MOCKINGBIRD IN THE BAHAMA ISLANDS

Donald W. Buden

Abstract.—Northern Mockingbirds in the extreme northern Bahamas on the Little Bahama Bank mensurally and chromatically are more similar to examples from Florida than to those from the more southern Bahamas. They are included in *Mimus polyglottos orpheus,* whereas the Bahaman populations south of the Little Bank and those in the Greater Antilles are considered *M. p. orpheus.* The Northern Mockingbird probably colonized the Bahamas by natural dispersal overwater from both the north (southeastern United States) and the south (Greater Antilles). Birds captured on Jamaica and Great Inagua were released on New Providence, but several decades after the species was first recorded there. Introductions by man from North America have been claimed but are unconfirmed. The Northern Mockingbird has increased in number markedly since the late 1800s probably in large measure as a result of man-induced alteration of natural habitats.

The Northern Mockingbird, *Mimus polyglottos,* is widespread and locally common to scarce in the Bahamas, including the Turks and Caicos Islands (Fig. 1). It occurs mainly in the settlements and in open areas (e.g., fields and widely scattered trees, and sparse, coastal scrub), and has a somewhat spotty distribution, apparently being absent where seemingly suitable habitat is available. Recent reports suggesting it first arrived on New Providence, or in the Bahamas, generally during the early 1900s (Brudenell-Bruce 1975; Campbell 1976, 1978; Green 1977) are contradicted by earlier records (Table 1). Paulson (1966) and Miller (1978) alluded to a recent spread of *M. polyglottos* southward in the chain to Cat and San Salvador islands, respectively, but they did not discuss its distribution elsewhere in the archipelago. The present paper includes a chronology of the first records of *M. polyglottos* on 45 Bahama Islands, and it reviews geographic variation, taxonomy, and probable sources of Bahaman populations.

Methods.—The linear measurements (in mm) are wing length (wing flat against rule), tail length (from base to tip of longest rectrix), bill length (exposed culmen), bill depth and bill width (both at the level of the anterior halves of the nares), and tarsus length (from the posterior surface of the proximal end of the tarsometatarsus to the last undivided scute near the base of the toes); the bill, tail, and tarsus were measured with dial calipers. Measurements were submitted to a single classification analysis of variance and to a-posteriori testing for differences between paired means using the GT2-method (Sokal & Rohlf 1981).

Color comparisons were made largely by eye, but ventral coloration in selected samples was measured also with an Applied Color System Spectro-Sensor II Reflectance Spectrophotometer coupled to a DEC PDP 11/23 Mini Computer, the data processed via an ACS proprietary Chroma-Pac program. Values on the "L" scale (0 = black to 100 = white) were obtained for the upper part of the breast and the lower part of the

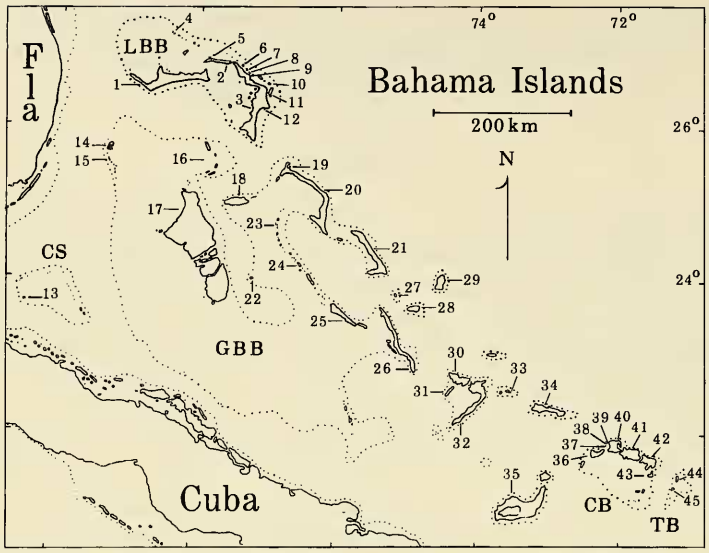

Fig. 1. Map of the Bahama Islands showing where *Mimus polyglottos* has been recorded in the archipelago; LBB = Little Bahama Bank, CS = Cay Sal Bank, GBB = Great Bahama Bank, CB = Caicos Bank, TB = Turks Bank. See Table 1 for place names.

abdomen. Among the specimens examined by spectrophotometry, all those from Florida and Jamaica, all but two from Great Inagua, and all but two from the Little Bahama Bank were collected during the late 1800s. Those from the Turks and Caicos Islands were collected in 1961 and 1972, and those from the Great Bahama Bank were taken in different years from 1890 to 1961.

The amount of white on the fourth and fifth rectrices (third and second, respectively, in the older literature, with the outermost the first) is the estimated percent of surface area covered; frequency distributions were tested for association using Fisher's Test (Armsen 1955, Langley 1970). Rectrices were examined unilaterally on each specimen, but not necessarily all on the same side across samples.

Unless stated otherwise, the Hispaniolan sample includes specimens from the satellite islands Vache, Gonave, Tortue, and Saona, and the locality "Florida" refers to the peninsula only; the Keys are treated separately. Sexes have been treated separately in all comparisons.

Distribution.—The Northern Mockingbird was first recorded in the Bahamas by Bryant (1866). He considered it "abundant" in the southern Bahamas on Great Inagua during the winter of 1865/66, but did not see it elsewhere in the archipelago on 12 other islands and island groups visited during the mid-1800s (Bryant 1859, 1866). Cory (1880) also saw many on Great Inagua, and none on any of the other Bahama Islands he visited in 1879—Andros, New Providence, the Exumas, Long Island, and the Mira Por Vos Cays.

The first record of *M. polyglottos* on the Little Bahama Bank is a specimen taken on [Great] Abaco in Mar 1886 (Ridgway 1891) during apparently the first ornithological survey of the bank. Allen (1905) stated that the Northern Mockingbird seemed to be a recent arrival to the Northern Bahamas, and went on to say that a resident on Little Abaco had noticed an increase in the mockingbird population there over several years in the very early 1900s. But 32 specimens in the FMNH collected on Grand Bahama by D. J. Sweeting, 11 Dec 1891 to 28 Jan 1892,

Table 1.—First records of *Mimus polyglottos* on different Bahama Islands. Sources of unpublished data are given as the names of observers and collectors enclosed in brackets. B & S = Buden and Schwartz, JCD = J. C. Dickinson, Jr., S & K = Schwartz and Klinikowski, T & W = Todd and Worthington.

Island	Date and reference	Island	Date and reference
1. Grand Bahama	1891 (Cory, 1891a)	24. Staniel Cay	1977 [T. Schoener]
2. Little Abaco	1902 (Bonhote, 1903)	25. Great Exuma	1964 (Bond, 1964)
3. Great Abaco	1886 (Ridgway, 1891)	26. Long Id.	1909 (T & W, 1911)
4. Grand Cays	1976 [T. Schoener]	27. Conception Id.	—— (Riley, 1905)
5. Hawksbill Cays	1976 [T. Schoener]	28. Rum Cay	1976 [M. H. Clench]
6. Powell Cay	1976 [M. H. Clench]	29. San Salvador	1973 (Miller, 1978)
7. Nun Jack Cay	1942 [A. C. Twomey]	30. Crooked Id.	1976 (Bond, 1978)
8. Green Turtle Cay	1886 [A. H. Jennings]	31. Fortune Id.	1972 [D. W. Buden]
9. Sand Bank Point Cay	1976 [T. Schoener]	32. Acklins Id.	1957 (?) (Bond, 1958)
10. Man of War Cay	1976 [M. H. Clench]	33. West Plana Cay	1976 [M. H. Clench]
11. Elbow Cay	1904 (Allen, 1905)	34. Mayaguana	1891 (Cory, 1892a)
12. Cherokee Sound Cays	1976 [T. Schoener]	35. Great Inagua	1866 (Bryant, 1866)
13. Cay Sal	1968 (B & S, 1968)	36. Providenciales	1970 [D. W. Buden]
14. Bimini Ids.	1891 (Cory, 1891b)	37. Pine Cay	1974 [JCD]
15. Cat Cay	—— (Bond, 1950)	38. Dellis Cay	1972 [D. W. Buden]
16. Berry Ids.	1891 (Cory, 1891b)	39. Parrot Cay	1972 [D. W. Buden]
17. Andros	1890 (Northrop, 1891)	40. North Caicos	1971 [D. W. Buden]
18. New Providence	1898 (Bonhote, 1899)	41. Middle Caicos	1972 [D. W. Buden]
19. Harbour Id.	1952 (Bond, 1952)	42. East Caicos	1978 [D. W. Buden]
20. Eleuthera	—— (Bond, 1950)	43. South Caicos	1961 (S & K, 1963)
21. Cat Id.	1958 (Bond, 1959)	44. Grand Turk	1959 (Bond, 1959)
22. Green Cay	1976 [M. H. Clench]	45. Salt Cay	1979 [D. W. Buden]
23. Allan's Cays	1974 [T. Schoener]		

indicate that *M. polyglottos* was well-established on the Little Bank, at least locally, in the late 1800s.

The first record for the Great Bank was provided by Northrop (1891), who considered *M. polyglottos* "common" at Nichols Town, northern Andros Island, in 1890. One slightly earlier record for New Providence is questionable and another probably is a typographical error: Moore (1877) mentioned a female "Mimus polyglottos (?)" killed on 28 Feb [1877?], and Jennings (1888) reported *M. polyglottos* on "Green Turtle Cay, NP" probably intending Abaco for NP = New Providence. Jennings included several Abaco records in his "New Providence list," and USNM 275024 is a Northern Mockingbird labeled as having been collected on Green Turtle Cay by him, 3 Jun 1886. Green Turtle Cay, which lies off the eastern coast of Great Abaco (locality number 8 in Fig. 1), is the only island of that name known to me; it was settled very early in Bahaman history (Durrell 1972) and thus is unlikely to have been confused with any other island. The first confirmed record for New Providence is an adult female collected on 30 September 1898 by J. L. Bonhote, who stated it was "the only specimen of this species" he saw during his stay of "about a year" (Bonhote 1899).

By 1898, the Northern Mockingbird had been recorded on nine different islands and island groups in the Bahamas (Great Inagua and Mayaguana in the south; Grand Bahama, Great Abaco, Green Turtle Cay, Bimini Islands, Berry Islands, Andros, and New Providence in the North), but it was still unconfirmed from the central part of the chain. W. W. Worthington (*in* Todd and Worthington 1911) considered *M. polyglottos* "common at Clarence Town," Long

Table 2.—Selected measurements (in millimeters) of Northern Mockingbirds from eight localities (Loc.) in Florida, the Bahamas, and the Greater Antilles; FL = Florida, LB = Little Bahama Bank, GI = Great Inagua, TC = Turks and Caicos Islands, CU = Cuba, HI = Hispaniola,[1] JA = Jamaica, PR = Puerto Rico.

	Males			Females		
Loc.	n	Mean ± SD	(Range)	n	Mean ± SD	(Range)
			Wing length			
FL	22	111.5 ± 3.4	(105–119)	22	109.2 ± 3.6	(104–116)
LB	7	112.4 ± 3.1	(108–117)	3	112.0 ± 4.4	(109–117)
GI	9	106.4 ± 3.6	(101–112)	1	104.0	
TC	5	111.4 ± 2.2	(110–115)	1	99.0	
CU	15	108.6 ± 4.3	(102–117)	12	101.8 ± 3.4	(96–106)
HI	24	110.9 ± 3.6	(103–116)	14	103.6 ± 3.5	(97–109)
JA	21	108.9 ± 3.3	(100–113)	24	101.4 ± 2.5	(96–106)
PR	18	110.4 ± 3.1	(105–115)	11	103.1 ± 2.8	(98–107)
			Tail length			
FL	21	114.7 ± 5.1	(104.2–121.2)	22	112.7 ± 4.3	(103.0–119.8)
LB	14	110.8 ± 5.5	(97.7–119.0)	14	111.8 ± 3.7	(104.5–119.8)
GI	8	107.1 ± 4.0	(99.2–112.5)	7	106.3 ± 4.0	(102.3–114.3)
TC	5	110.4 ± 3.7	(105.0–113.6)	1	108.8	
CU	14	109.5 ± 4.9	(98.5–116.5)	12	104.5 ± 3.9	(97.4–110.0)
HI	23	110.5 ± 5.1	(101.4–118.0)	13	103.3 ± 3.3	(98.0–109.3)
JA	21	110.3 ± 4.2	(101.0–116.2)	23	102.8 ± 3.1	(97.3–109.0)
PR	16	111.3 ± 2.7	(107.7–117.5)	9	104.7 ± 3.3	(99.5–110.5)
			Bill length			
FL	22	16.2 ± 0.8	(14.8–17.4)	20	15.9 ± 0.9	(14.4–18.0)
LB	19	15.7 ± 1.0	(14.0–17.5)	15	15.3 ± 0.8	(14.2–16.8)
GI	20	15.8 ± 0.9	(14.1–17.7)	14	15.8 ± 0.7	(14.3–16.9)
TC	5	16.0 ± 0.8	(15.3–17.3)	1	15.3	
CU	14	15.9 ± 1.1	(14.4–18.3)	13	15.7 ± 0.7	(15.2–17.4)
HI	26	16.5 ± 1.0	(14.3–18.5)	20	16.3 ± 1.1	(14.4–18.1)
JA	20	16.6 ± 0.6	(15.2–17.6)	21	16.2 ± 0.5	(15.5–17.0)
PR	18	16.5 ± 1.1	(15.0–18.7)	11	15.8 ± 0.6	(14.8–17.0)

[1] Including satellite islands Vache, Gonave, Tortue, and Saona.

Island, in 1909, although as early as 1879, local villagers told Cory (1880) that a small kind of mockingbird (not the Bahama Mockingbird, *M. gundlachii*) was seen there occasionally, at least in summer. *M. polyglottos* was unknown on other islands in the more central part of the archipelago until Bond (1950) recorded it on Eleuthera, presumably based on sight records by J. Van Tyne and H. Mayfield during the mid-to-late 1940s (see Bond 1950:ix).

Mimus polyglottos has become much more numerous and widespread in the archipelago since the early 1900s. However, that nearly half the records in Table 1 are from 1970 and later probably is due largely to sampling and not necessarily to recent colonizations. Many of the islands were inadequately surveyed and, in most cases, approximate dates of colonization cannot be established. Among the possible exceptions is San Salvador, which has been visited by ornithologists fairly frequently over the past 100 years. *M. polyglottos* was not encountered there during field observations in 1963 (Paulson 1966), nor during earlier explorations, but has been present in small number "at least since December 1973" (Miller 1978). Also, the Northern Mockingbird probably colonized the Turks and Caicos

Table 3.—Wing and tail measurements (in millimeters) and amount of white (D = dark, <25%, I = intermediate, 25–75%, P = pale, >75%) on rectrices of 21 Northern Mockingbirds from the Cay Sal, Great Bahama, Turks, and Caicos banks. AN = Andros, BE = Berry Islands, BI = Bimini Islands, CS = Cay Sal, EL = Eleuthera, GT = Grand Turk, LI = Long Island, NP = New Providence, SC = South Caicos. m = male, f = female, ? = sex unidentified.

Locality	Sex	Wing length	Tail length	Amount of white								
				4th rectrix inner web			5th rectrix inner web			5th rectrix outer web		
				D	I	P	D	I	P	D	I	P
Cay Sal												
Bank: CS	f	101	104.8		X				X		X	
Great Bahama												
Bank: BI	?	—	—		X				X	X		
BE	m	—	118.7			X			X			X
	m	—	117.5	X				X			X	
AN	m	109	106.7			X			X	X		
	m	107	107.9		X				X	X		
NP	m	109	109.7			X			X	X		
	m	115	121.9		X				X	X		
	f	110	107.0		X				X	X		
EL	m	110	109.3		X				X		X	
	m	114	117.5		X				X		X	
	f	102	106.5		X				X	X		
	f	100	105.1	X					X		X	
LI	m	102	103.6			X			X		X	
	m	104	111.1		X				X		X	
Turks												
Bank: GT	m	110	105.0	X					X			X
	m	112	113.6		X				X		X	
	m	110	108.5	X					X		X	
	m	115	113.8		X				X			X
Caicos												
Bank: SC	m	110	111.0			X			X		X	
	f	99	108.8		X				X	X		

Islands after 1930. It was not mentioned in earlier expedition reports and there is no evidence it was encountered by Paul Bartsch and expedition members who visited at least 22 of the islands in July and August 1930 (Bartsch, unpublished field notes; USNM bird catalog). Bond (in litt.) found it widespread on Grand Turk in 1959.

Breeding doubtless occurs on most of the islands, but is confirmed only for Grand Bahama (nestling — MCZ 17142, collected on 14 Apr 1936 by J. C. Greenway, Jr.), Little Abaco (Bonhote 1903), Great Abaco (King et al. 1979), Elbow Cay (Allen 1905), Bimini Islands (Vaurie 1953), Cat Island (Buden 1987b), Great Inagua (fledgling—USNM 323717, collected on 10 Aug 1930 by P. Bartsch), and Providenciales (Aldridge 1984).

Size comparisons.—Northern Mockingbirds from Florida, the Bahamas, and the Greater Antilles overlap broadly in most measurements and the females tend to be smaller than the males (Tables 2 and 3). On the average, the specimens from Great Inagua (southern Bahamas) are the smallest, whereas those from the Little Bahama Bank (northernmost Bahamas) and Florida are among the largest. At the 0.05 level of significance, the Little Bank and Florida sam-

Table 4.—Probability of difference (* = $P < 0.05$) between paired means in six sets of measurements of Northern Mockingbirds using the GT2-method (Sokal and Rohlf 1981) and data in Tables 2 and 4 (X = combinations excluded from comparisons). Males are above the diagonal and females are below in each set. Localities are listed from north to south generally; FL = Florida, LB = Little Bahama Bank, GI = Great Inagua, CU = Cuba, HI = Hispaniola, JA = Jamaica.

Wing length

	FL	LB	GI	CU	HI	JA
FL	—		*			
LB[1]	X	—	*	*		*
GI[2]	*	X	—		*	
CU	*	X		—		
HI	*	X			—	
JA	*	X				—

Tail length

	FL	LB	GI	CU	HI	JA
FL	—		*	*		
LB		—				
GI	*	*	—			
CU	*	*		—		
HI	*	*			—	
JA	*	*				—

Bill length

	FL	LB	GI	CU	HI	JA
FL	—					
LB		—			*	*
GI			—			
CU				—		
HI		*			—	
JA		*				—

Bill depth

	FL	LB	GI	CU	HI	JA
FL	—		*			
LB		—				
GI	*	*	—		*	
CU	*	*		—		
HI					—	
JA	*	*				—

Bill width[3]

	FL	LB	GI	CU	HI	J
FL	—					
LB		—				
GI			—			
CU				—		
HI					—	
JA	*				*	—

Tarsus length

	FL	LB	GI	CU	HI	JA
FL	—		*			
LB		—	*			
GI	*		—	*	*	*
CU				—		
HI					—	
JA	*					—

[1] The small sample of three females excluded from these comparisons averaged (112.4 mm) closer to the Florida sample (111.5) than to the one from Inagua (106.4).

[2] The measurements of six females from the Bahamas south of the Little Bahama Bank were pooled: Cay Sal (1), New Providence (1), Eleuthera (2), Great Inagua (1), South Caicos (1).

[3] A single classification analysis of variance of measurements of males revealed no significant difference at the 0.05 level and the GT2-method was not applied.

ples do not differ from each other in wing, tail, bill, and tarsus measurements (Table 4). On the other hand, males from the Little Bank are significantly larger than those from Inagua in wing length, bill length, bill depth, and tarsus length, and the females are significantly larger in tail length and bill depth, and probably (see footnote, Table 4) in wing length as well. Inaguan males are smaller ($P < 0.05$) than those from Cuba, Hispaniola, and Jamaica in tarsus length and smaller than Hispaniolan males also in bill depth; no statistically significant differences were found between Inaguan females and those from Cuba, Hispaniola, and Jamaica.

Measurements of birds from Puerto Rico were not submitted to testing, but they tend to average larger than other Antillean samples in most cases (Table 2). Wing and tail measurements of birds from the Cay Sal, Great Bahama, Turks, and Caicos banks (Table 3) overlap broadly with those from the other samples, but there is little comparative material from these islands. Specimens from the Florida Keys tend to average smaller than those from the peninsula (e.g., wing 110.8 in 4 males, 105.0 in 6 females; tail 112.9 in 4 males, 106.1 in 6 females).

Color comparisons.—Northern Mocking-

birds from Florida and the Little Bahama Bank are darker (more gray, less white) on the venter than those from the southern Bahamas and the Greater Antilles, the females being the same as, or very slightly darker than, males. The whitest birds are from the Turks and Caicos Islands, but this condition may be due in part to their having been collected relatively recently (see "Methods"). Examples from the Great Bank are somewhat intermediate in ventral coloration but average closer to samples from the southern Bahamas and the Antilles than to those from Florida and the Little Bank. The four specimens from Eleuthera are subadults faintly spotted on the upper part of the breast and on the sides of the throat and the transition between the darker coloration of the breast and paler abdomen is more abrupt than in most other Bahaman specimens. Visual impressions of differences in ventral coloration are confirmed by reflectance spectrophotometry in selected samples (Fig. 2). Three males and three females from Puerto Rico are anomalous in being much darker on the breast than the others in the series (the males also being at or near the upper extreme in most measurements). All six (FMNH 28659, 28661–65) were collected at an unspecified locality by C. P. Streator in Oct and Nov 1888. I found no appreciable geographic differences in dorsal coloration, nor in the amount of white on the wing, among Bahaman samples.

Variation in the amount of white on the tail tends to be more uniformly clinal than does ventral coloration, also with the "darkest" birds in the north and the "whitest" in the south, the females usually with less white than the males (Table 5). I found no significant differences ($P > 0.05$, Fisher's Test) in frequency distributions for "tail color" between Florida and Little Bank samples. But compared with specimens from Inagua, both sexes from the Little Bank have less white on the inner web of the fourth rectrix, and the males also have less white on the outer web of the fifth rectrix ($P < 0.05$), the

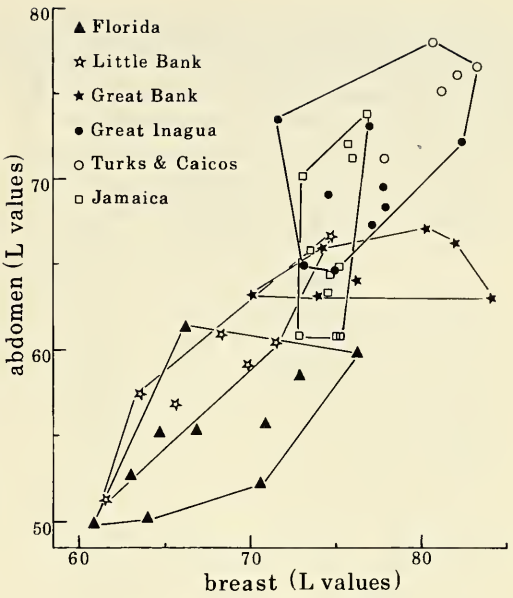

Fig. 2. Spectrophotometry L values (0 = black to 100 = white) of the upper part of the breast and lower part of the abdomen in males of *Mimus polyglottos* from Florida, the extreme northern Bahamas (Little Bahama Bank), the Great Bahama Bank, the southern Bahamas (Great Inagua, Turks and Caicos), and Jamaica.

Inaguan birds being more like those from the Antilles. Among Antillean samples, specimens from Cuba and Puerto Rico tend to have less white on the tail than those from Hispaniola or Jamaica.

Nine of ten males from six different islands and island groups on the Great Bahama Bank have more than 75% of the inner web of the fifth rectrix white, thus, as a group, resembling the southern Bahaman-Antillean samples in this character. But they are more nearly intermediate between Florida-Little Bank samples and those from the southern Bahamas in the amount of white on the outer web of the fifth and the inner web of the fourth rectrices. Of these nine, the specimen with the least amount of white on the tail is from the extreme north, in the Berry Islands. Specimens from the Florida Keys are similar to those from the peninsula in coloration.

Table 5.—Distribution of the amount of white on rectrices of Northern Mockingbirds from six localities in Florida, the Bahamas, and the Greater Antilles with results of Fisher's Test (FT) for association between selected paired samples (an asterisk indicates $P \leq 0.05$). Localities are listed from north to south generally; FL = Florida, LB = Little Bahama Bank, GI = Great Inagua, CU = Cuba, HI = Hispaniola, JA = Jamaica, PR = Puerto Rico. Numbers in parentheses are percentages.

	Males					Females				
		Amount of white					Amount of white			
Locality	n	<25%	25–75%	>75%	FT[1]	n	<25%	25–75%	>75%	FT[1]
				4th rectrix, inner web						
FL	22	12 (55)	10 (45)		LB	21	16 (76)	5 (24)		LB[2]
LB	18	6 (33)	11 (61)	1 (6)	GI*	12	6 (50)	6 (50)		GI*
GI	19	2 (10)	6 (32)	11 (58)	FL*	14	2 (14)	7 (50)	5 (36)	FL*
CU	15		1 (7)	14 (93)	GI*	15	2 (13)	7 (47)	6 (40)	GI
HI	25		1 (4)	24 (96)	GI*	18	1 (6)	3 (17)	12 (67)	GI
JA	21		1 (5)	20 (95)	GI*	20			20 (100)	GI*
PR	19		5 (26)	14 (74)	GI	11		5 (45)	6 (55)	GI
				5th rectrix, inner web						
FL	22		7 (32)	15 (68)	LB	21		10 (48)	11 (52)	LB
LB	18		5 (28)	13 (72)	GI	12		4 (33)	8 (67)	GI
GI	19		1 (5)	18 (95)	FL*	14		3 (21)	11 (79)	FL
CU	15			15 (100)	GI	15		1 (7)	14 (93)	GI
HI	25			25 (100)	GI	18			18 (100)	GI
JA	21			21 (100)	GI	20			20 (100)	GI
PR	19			19 (100)	GI	11			11 (100)	GI
				5th rectrix, outer web						
FL	22	20 (91)	2 (9)		LB[2]	21	20 (95)	1 (5)		LB
LB	18	14 (78)	4 (22)		GI*	12	10 (84)	1 (8)	1 (8)	GI*
GI	19	2 (11)	4 (21)	13 (68)	FL*	14	2 (14)	6 (43)	6 (43)	FL*
CU	15	1 (7)	5 (33)	9 (60)	GI	15	9 (60)	6 (40)		GI
HI	25		3 (12)	22 (88)	GI	18	3 (17)	1 (6)	14 (78)	GI
JA	21	1 (5)		15 (95)	GI	20	1 (5)	1 (20)	15 (75)	GI
PR	19	3 (16)	1 (5)	15 (79)	GI	11	4 (36)	3 (28)	4 (36)	GI

[1] The two categories <25% and 25–75% have been pooled.

[2] Both samples fall into one and the same color-category or have the same ratio and are considered not different; the test is not applicable.

Taxonomy.—Slight differences in size and coloration among local populations of *Mimus polyglottos* in the Bahamas have led to diverse taxonomic interpretations. Sharpe (1881) proposed the name *Mimus elegans* for the birds on Great Inagua; his list of specimens included only one of that form. Cory (1891c) included all Bahaman populations along with those of Jamaica, Cuba, Grand Cayman, and Hispaniola under *M. p. orpheus* (Linnaeus). Later, he (Cory 1892b) considered Inaguan birds an endemic subspecies (*M. p. elegans*) and included "northern birds" (from Abaco, Bimini, and Andros) under *M. p. polyglottos* (Linnaeus), as did Ridgway (1907), who previously (Ridgway 1891) reported a specimen from Abaco tentatively under *M. p. elegans*. The nominate race is widespread in eastern North America. Riley (1905) listed all records of Northern Mockingbirds in the Bahamas under *M. p. polyglottos*. Todd (*in* Todd & Worthington 1911) considered the birds from Inagua *M. p. orpheus* and those in the northern Bahamas *M. p. polyglottos*. Bangs (1916) proposed the name *M. p. delenificus* for Northern Mockingbirds in the northern Bahamas (at least on Andros and

Little Abaco), and his description indicated this race to be somewhat intermediate chromatically between "*elegans*" and the nominate subspecies.

Hellmayr (1934), after examining 135 FMNH specimens from the Bahamas (including 38 from Grand Bahama and 88 from Great Inagua) included all Bahaman populations under *M. p. elegans*. He stated "Bahaman birds are easily told from typical *polyglottos* by their much whiter underparts with very little, if any, grayish suffusion on the chest." He said he was "unable to split them into two races, since the lesser amount of white on the third rectrix, which served as the principal character for the discrimination of *M. p. delenificus* (from Andros Island), proves to be exceedingly variable." He reported also that the amount of white on the wing was variable among Bahaman samples and that although Inaguan birds tended to have more white on the tail and averaged smaller in size than those elsewhere in the archipelago, they were insufficiently distinct "to justify their retention as a separate race." Hellmayr (1934) did not compare Bahaman birds with those from the Antilles, but he considered the latter *M. p. orpheus*. More recent authors (e.g., Bond 1956, Davis & Miller 1960) include all Bahaman and Antillean populations together under *M. p. orpheus*.

I agree with the more recent taxonomic treatment generally, but differ in including the Little Bahama Bank within the range of *M. p. polyglottos*. Specimens from the Little Bank are grayer on the venter and have less white on the tail than those from the more southern Bahama Islands; they more closely resemble specimens from Florida (including the Keys) in these characters. They also tend to average slightly larger (wing length, bill depth, and tarsus length in males; wing length, tail length, and bill depth in females) than those from Great Inagua in the southern Bahamas, but they are not significantly different ($P > 0.05$) from peninsular Florida birds in any of the measurements. I tentatively include all of the Great Bahama Bank (together with the Cay Sal Bank) in the range of *M. p. orpheus*, mainly on the basis of ventral coloration and the amount of white on the tail in the relatively few specimens examined, but in some characters examples from the Great Bank are more nearly intermediate, and occasionally closer to the Florida-Little Bank samples.

Discussion.—The avifauna of the Bahamas was derived overwater largely, if not entirely, from the Antilles and (to a lesser degree) the southeastern United States (Buden 1987a). In the case of *Mimus polyglottos*, the occurrence of the nominate subspecies on the Little Bahama Bank, and *M. p. orpheus* on the more southern islands suggests colonization via both routes.

Campbell (1976, 1978) suggested *M. polyglottos* was introduced to the Bahamas from North America, and Brudenell-Bruce (1975) stated it was "introduced on New Providence only 60 or 70 years ago." But there is no evidence to support these claims and no need to hypothesize an introduction to account for its presence in the Bahamas. *M. polyglottos* is vagile, as indicated by its widespread distribution in the archipelago and its occurrence on many of the small, remote, and largely uninhabited islands (e.g., Grand Cays, Cay Sal, Green Cay, West Plana Cay). That the nominate race probably reached the northern Bahamas from Florida by natural means is very likely and does not exclude the possibility that birds also were introduced to the islands from eastern North America. Many *M. p. orpheus* were introduced to New Providence from Great Inagua and Jamaica in the early 1930s (Bond fide Miller 1978), and Bond (1952) stated Northern Mockingbirds "inhabiting New Providence, Harbour Island and Eleuthera may be descendants of those introduced from Jamaica following the 1928 hurricane."

The "Antillean race" (*M. p. orpheus*) was well established in the southern Bahamas on Great Inagua at the time of the first or-

nithological explorations in the mid-1800s (Bryant 1866). In all probability, it colonized the southern Bahamas from Cuba or Hispaniola, or both. The abundance of Northern Mockingbirds at opposite ends of the archipelago (Inagua and the Little Bank) when they were absent or very rare on many intervening islands also suggests a bipartite route of colonization.

Land development (e.g., housing and road construction) probably has contributed greatly to the spread and population growth of the Northern Mockingbird in the Bahamas by providing an abundance of open, sparsely vegetated habitats and additional sources of food and freshwater. In the Bahamas, *M. polyglottos* is much more numerous in edificarian and ruderal habitats than in the broad expanses of scrublands and woodlands, and it has become one of the most common "yard-birds" in Nassau and immediate vicinity, the most densely populated area in the Bahamas. Jehl & Parkes (1983) reported increased availability of freshwater at a new military base on Socorro Island, Mexico, as probably a key factor responsible for the recent successful colonization of *M. polyglottos*. Bond (1984) reported *M. polyglottos* evidently has increased in number in Hellshire Hills, Jamaica, as a result of a recently constructed road, and it may be displacing a relict population of the Bahama Mockingbird (*M. gundlachii*) there. The Bahama Mockingbird occurs sympatrically with *M. polyglottos* on many Bahama Islands, but it prefers the more densely vegetated scrublands and woodlands. Its numbers are likely to decrease in the wake of further land development and the degradation of natural habitats. *M. polyglottos,* on the other hand, has adapted well to urban environments and land modification in the islands, and it may be expected to become increasingly more numerous in the archipelago.

Specimens examined.—*Mimus polyglottos orpheus.*—Florida: peninsula, MCZ (22M 22F); Keys, FMNH (3F), MCZ (4M 5F). Bahama Islands: Grand Bahama, AS (1F), FMNH (12M 12F), MCZ (2M); Great Abaco, FMNH (3M 2F 1?), USNM (1M); Little Abaco, MCZ (1M); Green Turtle Cay, USNM (1M).

Mimus polyglottos orpheus.—Bahama Islands: Cay Sal, AS (1F); Bimini Islands, FMNH (1?); Berry Islands, FMNH (2M); Andros Island, AMNH (1M), MCZ (1M); New Providence, AMNH (1M), AS (1F), LSUMZ (1M); Eleuthera, AS (2M 2F); Long Island, MCZ (2M); Great Inagua, AS (1M), FMNH (16M 14F), MCZ (3M 3?), USNM (1M 1F 1?). Turks and Caicos Islands: South Caicos, AS (1M 1F); Grand Turk, AS (1M), LSUMZ (3M). CUBA (by province): La Habana, MCZ (1M), USNM (2M 1F); Matanzas, MCZ (3F), USNM (1M); Cienfuegos, USNM (1F); Holguin, MCZ (3M 2F), Santiago de Cuba, MCZ (1M), USNM (1M 3F); Guantanamo, USNM (6M 5F). Hispaniola: Haiti, MCZ (2M), USNM (3M 3F); Dominican Republic, FMNH (5M 6F), MCZ (7M 5F), USNM (2M 2F). Île-à-Vache: USNM (1M 2F). Île de la Gonâve: USNM (2M 2F). Île de la Tortue: USNM (2M 1F). Isla Saona: MCZ (2M). Jamaica: MCZ (21M 24F). Puerto Rico: FMNH (10M 6F), USNM (9M 6F).

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Department of Natural Sciences, Northern State College, Aberdeen, South Dakota 57401.